

AVIATION TRENDS

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INTRODUCTION

- Summary of FAA Aerospace Forecasts
 - FAA Aerospace Forecasts Document-Fiscal Years 2006-2017 (2/06)
 - Access:http://www.faa.gov/data_statistics/aviation/aerospace_forecasts/2006-2017/
- Related Programs
 - Runway Development
 - Regional Studies
 - Very Light Jets



DEFINITIONS

- Enplanements: revenue passenger boardings
- GDP: Gross Domestic Product
- Available seat miles: airline industry measure of passenger carrying capacity
- Revenue passenger miles: airline industry measure of passenger demand
- Revenue ton miles: airline industry measure of cargo demand
- Yield: one airline industry measure of financial performance.
Yield= fare/miles traveled
- Airfield: runway, taxiway, apron, approach/departure procedures
- Landside: terminal, hangars, airport buildings, parking, on-airport ground access



DEFINITIONS

- Mainline carriers: partition feed to affiliated carriers (i.e. regional), generally operate aircraft with 100+ seats (Embraer 190 in mainline)
 - Legacy carriers: AA, CO, DL, NW, UA, US
 - Low Cost Carriers (LCC): Southwest, Jet Blue, Frontier, AirTran
 - Other: Alaska, Aloha, Hawaiian, Midwest
- Regional carriers: feed traffic to mainline carriers, generally operate aircraft less than 100 seats. SkyWest, Mesa, Comair.
- All cargo carriers: Federal Express, UPS, DHL, etc.
- Air Taxi operators: for hire, non-scheduled
- OEP: Operational Evolution Plan-means by which FAA tracks improvements at the busiest airports



FORECAST ASSUMPTIONS

- No successful terrorist incident against either the U.S. or world aviation (page 25)
- No further major contractions of the airline industry through bankruptcy, consolidation or liquidation (page 25)
- Fuel price/availability does not become an issue (pg 27)
- U.S. GDP growth: 3.1%/year (2005-2017) (Table 2 App)
- World GDP growth: 3.1%/year (2005-2017) (Table 3 Appendix)
 - Latin American growth: 3.8%/year
 - Pacific growth: 3.6%/year
 - China 7.0%/year (page 28)
 - India 5.8%/year (page 28)



U.S. COMMERCIAL AIR CARRIER GROWTH-SYSTEM

- 2005 record 739 M enplanements-(page 3)
- System Capacity: Measured by Available Seat Miles-forecast growth of 4.2% year (2008-2017) (page 29)
- Passenger Enplanements: forecast growth of 3.4%/year (2008-2017) (page 30)
 - Oakland: growth 4.24%/year (2006-2025) FAA TAF
 - San Francisco: growth 3.33%/year (2006-2025) TAF
 - San Jose: growth 4.58%/year (2006-2025) TAF
- Regional carrier growth (4.3%/year) forecast to exceed mainline growth (3.1%/year) (page 30)
- Trip length to grow by 120 miles (to 1172 mi)-faster growth in international trips, increased point to point



COMMERCIAL AIR CARRIER-DOMESTIC

- Legacy carriers will continue to fine tune business models (pg 30)
- Domestic ASM growth (2008-2017)-3.8%/year with most growth in regional and LCC segments (pg 30)
- Mainline carrier yield forecast to decline 0.8%/year (real terms) as legacy carriers match LCC fares on competitive routes (page 32)
- Domestic mainline aircraft size has been shrinking for eight years (120.4 seats 2005). Legacy carriers replacing larger aircraft with smaller narrow body aircraft. Forecast seats to further shrink until 2011 and then recover slightly (119.2 in 2017) (page 32)
- Regional carriers adding 70-90 passenger jets. Average seat increase from 49.4 (2005) to 55.1 (2017) (page 32)



U.S. AND FOREIGN FLAG CARRIER INTERNATIONAL

- Passenger growth 5.0%/year 2005-2017 (Table 8 App)
- Passenger growth for segments 2005-2017 (Table 8 APP):
 - Pacific: 7.0%/year
 - Latin America: 4.9%/year
 - Atlantic: 4.3%/year
- Seats available/flight forecast to grow from 214 (2005) to 221 (2017) (Table 9, App)



U.S. COMMERCIAL A/C-AIR CARGO

- Significant changes in the industry include (pg 35):
 - Air cargo security regulations-TSA and FAA
 - Mature domestic express market
 - Shift from air to truck
 - U.S. Postal Service use of all cargo carriers
- Assumptions (page 35):
 - Security restrictions will remain in place
 - Most of shift from air to ground has occurred
- All cargo carriers have increased air cargo share from 64.6% (1996) to 80.8% (2005) (page 36)
- Revenue Ton Miles: 2005 to 2017-domestic increase 3.2%/year; international increase 6.3%/year (Table 19)



COMMERCIAL AIRCRAFT FLEETS

- Total growth in fleet: 2.8%/year (2005-2017) (Table 20, App.)
- Most of growth in LCC and regional segments (page 37)
- Almost all growth of regional fleet is in 70 to 90 passenger jets (page 37)
- Most of growth in cargo aircraft fleet will be in wide-body aircraft (page 38)



GENERAL AVIATION

- Business use of general aviation aircraft will grow faster than personal/sport use (page 38)
- Increase in fractional, corporate, on-demand charter use driven by:
 - Corporate safety and security concerns
 - Increased processing time at U.S. commercial airports
- Very light jets (VLJ) (page 38):
 - Discussed further in later slides
 - Market of 400 to 500 aircraft per year
 - 4950 aircraft by 2017
 - FAA forecast is mid-range forecast
- Increased use of regional jets and very light jets will add complexity to national airspace system



SUMMARY OF FORECASTED TRENDS

- Airline Industry growth stronger than GDP growth
- International growth stronger than domestic growth
- Growth strong for airports that serve as Pacific or Latin America gateways
- Regional and LCC segments will grow faster
- No dramatic shifts in average seats per domestic flight
- Load factors will remain high (>78%)



RUNWAY IMPROVEMENTS AT OEP AIRPORTS

- Since 1999, 13 new runways have opened at 35 OEP airports (Mostly large hub primary airports)
 - PHL, PHX, DTW, CLE, DEN, MIA, IAH, MCO, MSP, CVG, STL, ATL, BOS)
- Through 2011, 6 OEP airports will commission 8 airfield projects
 - PHL, LAX, SEA, IAD, ORD (3 projects), CLT
- Six other airfield projects are in planning or environmental stage for OEP airports
 - FLL, PHL, PDX, Las Vegas Metro, Chicago Metro, IAD



TECHNOLOGY/PROCEDURE CHANGES

- Runway and taxiway improvements often add the most airfield capacity and contribute most to airfield delay reduction
- Improvements in technology (ground and aircraft based) and air traffic procedures improve airfield capacity, particularly under certain operating conditions
- These improvements discussed in subsequent presentation



REGIONAL AIRPORT STUDIES

- New England Regional Airport System Plan (six state region)
 - Complete 9/06
 - Support capability of system to absorb overflow from BOS
- New York Metro Area Air Service Demand Study
 - Status: ongoing, Phase 1 complete May 2007
 - Identify New York regional air passenger demand
 - Analyze ability of LGA, EWR, JFK to meet demand and ability of six regional airports (N.Y., N.J., Pa.) to assume additional share of regional demand
- Southern California Regional Transportation Plan-SCAG
 - Status: ongoing
 - Includes: aviation component of RTP (airport roles and forecasts), ground access needs, regional airspace analysis, regional airport management implementation plan



VERY LIGHT JETS

- Aircraft weighing < 10,000 pounds
- Cost: \$1 M to \$3.5 M
- Six seats (including crew)
- FAA estimates 4950 units by 2017
 - Perspective: 8500 non-VLJ business jets in current fleet
- FAA forecasts 70 to 75 percent of VLJ to be used in air taxi service
- Air taxi market hard to predict. Best guess is secondary airports in metropolitan areas on the coast (particularly Atlantic and Gulf coasts for now)



VERY LIGHT JETS

- Can use 3000 to 3500 foot runway
- Longer runway may be needed for air taxi use
- VLJ can be accommodated at most airports in their likely market w/o significant airfield improvements
- Air taxi may require improvements in approach minima
- Landside needs include:
 - Jet A fuel facilities
 - Hangar space
 - Larger GA terminal with expanded facilities
 - Increased FBO staff
 - Rental cars/restaurant



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THANKS

